

REMARKS

Claims 1-15, 19-24, 40-44, and 56 were previously canceled without prejudice. Claims 17-18, 25-27, 29-39, 48-49, 52, and 57 are original. Claims 16, 28, 45-47, 50-51, 53-55, and 58-67 are previously presented. Claims 16-18, 25-39, 45-55, 57-67 are pending for consideration. In view of the following remarks, Applicant respectfully requests reconsideration and withdrawal of the rejections and forwarding of the application on to issuance.

Rejection Under 35 U.S.C. §102

Claim 58 stands rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,493,692 to Theimer et al. (hereinafter, "Theimer").

Applicant addresses the rejection of claim 58 below.

Rejections Under 35 U.S.C. §103(a)

Claims 16-17, 25-30, 32, 34, 36-38, 45-47, 49-50, 52-54, 63, 65, and 67 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Theimer in view of U.S. Patent No. 5,977,913 to Christ (hereinafter, "Christ"). The Office states in its summary that claim 66 is rejected over Theimer in view of Christ but in its argument relies on U.S. Patent No. 5,659,596 to Dunn (hereinafter, "Dunn").

Claims 33, 35, and 51 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Theimer in view Christ and further in view of U.S. Patent No. 5,781,150 to Norris (hereinafter, "Norris").

Claims 18, 31, 39, 48, 55, 57, 59-62, and 66 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Theimer in view Christ and further in view of Dunn. Claims 39, 59-62, and 66 are not mentioned in the Office's

1 summary but are included here based on the Office's relying on Dunn to reject
2 them.

3 **Claim 64** stands rejected under 35 U.S.C. §103(a) as being unpatentable
4 over Theimer in view of Christ and further in view of U.S. Patent No. 5,917,425 to
5 Crimmons (hereinafter, "Crimmons").

6
7 **Response to 35 U.S.C. §102 Rejections**

8 Applicant respectfully submits that the Office has not established that
9 Theimer anticipates the subject matter recited in claim 58.

10 **Claim 58**, previously presented, recites a system comprising:

- 11 • a server having memory;
- 12 • a user database stored in the memory of the server, the user database
13 containing a user field for storing a user name of a mobile computer
14 user, and a last known location field for storing a most recent
15 location of a computer user identified in a corresponding user field;
- 16 • a wireless access point of a wireless local area network configured to
17 receive radio frequency network transmissions from one or more
18 mobile computers;
- 19 • a mobile computer having memory and a wireless network interface
20 for radio frequency communication with the wireless access point;
- 21 • a location tracking system in the mobile computer memory
22 configured to determine a location of the mobile computer;
- 23 • a location manager in the mobile computer memory configured to
24 transmit the location of the mobile computer and the user name of a
25 mobile computer user to the server via the wireless network interface
when a request to do so is received from the server; and
- a computing unit having a computing unit location manager
configured to search the user database of the server to determine
information regarding the location of a mobile user.

23 The Office's cited basis for rejecting claim 58 does not disclose a wireless
24 network interface for radio frequency communication or a wireless access point
25

1 configured to receive radio frequency transmissions from one or more mobile
2 computers, as recited by claim 58.

3 In the Office's rejection of claim 58, the Office asserts that Theimer
4 discloses "a wireless access point of a wireless local area network configured to
5 receive radio frequency network transmissions from one or more mobile
6 computers (Column 5, lines 26 – 32); a mobile computer having memory and a
7 wireless network interface for radio frequency communication with the wireless
8 access point (Column 5, lines 48-55)." (Office Action, pages 2-3, emphasis in
9 original.)

10 For the Office's convenience, Applicant sets forth the portion of Theimer
11 relied on by the Office in rejecting the mentioned aspects of claim 58 and other
12 portions for context. Theimer states:

13
14 A. General System Architecture

15 FIG 1. shows an office environment 10 configured to support
16 a "ubiquitous computing" system. Components that might be found
17 in such a system comprise hardwired network backbone 12, radio
18 and infrared transceivers 14 and 16 respectively, workstation 18, file
19 server 20, printer 22 and various mobile units 24, 26, and 28, and
20 user 30.

21 ...

22 Mobile communication and computer units connect to
23 backbone 12 via radio and infrared transceivers 14 and 16
24 respectively. One advantage of using infrared as a medium is reuse
25 of frequencies. Walls 13 are essentially opaque to infrared
transmission. Thus, infrared transmissions in one room do not
interfere with infrared transmissions in another. Individual rooms 11
are termed communication "cells" because of this effective
partitioning. This useful property allows the reuse of the infrared
bandwidth for each cell in the workplace. It will be appreciated that
the use of infrared as a medium for wireless communication is well
known in the art. Cell-based communication further allows

1 determination of a person's location to the granularity of the cell
2 size. That is, because the communication system must know how to
3 route communications to the correct cell for a particular person or
4 device, it also must know that person's or device's location, to the
5 accuracy of the cell size.

6 A similar communications partitioning is possible with a
7 single radio frequency if the "near field" components produced by
8 an antenna are used to couple the mobile units to the network. The
9 term "near field" describes those field components of an energized
10 antenna that do not give rise to propagating waves. The use of near
11 field communication is disclosed in copending, coassigned U.S.
12 patent application Ser. No. 07/984,821 entitled WIRELESS
13 COMMUNICATIONS USING NEAR FIELD COUPLING, filed
14 Dec. 3, 1992 by Richley et al., incorporated herein by reference.
15 Although only radio and infrared transmission are employed for
16 wireless communication in the presently preferred embodiment, it
17 will be appreciated that other types of electromagnetic and acoustic
18 transmission might be suitable. Additionally, it will be appreciated
19 that multiple frequencies may be employed to partition the
20 communication space into non-interfering cells.

21 *Column 5, lines 26-32 and column 5, line 48 to column 6, line 14,*
22 *emphasis added.*

23 The Office's relied-on portion of Theimer does not disclose a wireless
24 network interface for radio frequency communication or a wireless access point
25 configured to receive radio frequency transmissions from one or more mobile
computers. Instead, Theimer contemplates receipt of an infrared signal or a "near
field" component of a radio frequency.

In the case of the "near field" component of a single radio frequency from
radio transceiver 14, Theimer contemplates a partitioned cell based on an
electromagnetic field—not an RF signal. Theimer states that a communication
space may be partitioned (e.g., into a cell) with "a single radio frequency if the
'near field' components produced by an antenna are used to couple the mobile

1 units to the network.” (Column 5, line 65 to column 6, line 7). Thus, Theimer
2 teaches that a mobile unit may be coupled with a partition using a “near field”
3 component produced by an antenna. To understand what Theimer means by a
4 “near field” component, we look to how he describes them through the reference
5 incorporated in the above quotation. This reference is now U.S. Pat. No.
6 5,437,057 to Richley et al., hereinafter “Richley”.

7 While at first it may seem that Theimer discloses sending and receiving a
8 radio frequency to couple or locate mobile units, instead he is teaching use of an
9 antenna that produces a radio frequency but specifically teaches that radio waves
10 are not received. As mentioned, Theimer requires “near field” components.
11 Richley, on which Theimer relies to explain “near field” components, teaches that
12 “near field” components of a radio antenna are not radio waves. Richley states
13 that “near field” components “consist of electro and magnetic fields.” (*Richley*,
14 column 2, lines 59-61.) Richley also discloses that “near field” components do not
15 “give rise to propagating waves”. (*Richley*, column 2, lines 55-56.) Radio waves,
16 conversely, do give rise to propagating waves. Therefore, “near field”
17 components are not radio waves.

18 Richley continues to contrast “near field” components against radio waves,
19 teaching that near field components “transfer real power only when a receiving
20 antenna is sufficiently close to the transmitter (i.e., within its ‘near field region’)”
21 and that this “is in stark contrast to the far field components which radiate energy
22 even in the absence of a receiver.” (Column 2, lines 61-65.)

23 Also, Richley describes near field components as ones that are useful very
24 close to the antenna that emits them with a goal to having them provide well-
25 defined cell boundaries. (See *Richley*, column 11, lines 13-14, and column 10,

1 lines 62-68.) Thus, Richley describes these components as being “bound” to the
2 transmitting antenna. (Column 2, lines 59-61.) Richley sets forth an example of
3 the range of these near field components, teaching that “[t]ransmitters and
4 receivers constructed in accordance with the invention” produce a “near field
5 pattern” having “a useful range of about 12-15 feet”. (Richley, column 10, lines
6 62-68, emphasis added.) Thus, at best Theimer discloses use of a radio antenna
7 emitting an RF signal but not by receipt of an RF signal and only if the mobile unit
8 is within a particular cell very near the radio antenna.

9 Parsing Theimer’s statement based on this understanding from Richley,
10 Theimer’s statement is better understood as teaching that “near field” components
11 of an antenna that is emitting a single radio frequency may be used to couple
12 mobile units to a network but not by receiving those radio waves.

13 Accordingly, it is respectfully submitted that the Office has failed to show
14 that Theimer discloses a wireless network interface for radio frequency
15 communication and a wireless access point configured to receive radio frequency
16 transmissions from one or more mobile computers, as recited by claim 58.
17 Therefore, withdrawal of the rejection of claim 58 is respectfully requested.

18 19 35 U.S.C. §103 Rejections

20 Applicant submits that the Office’s basis for rejecting the below-addressed
21 claims fails to establish a *prima facie* case of obviousness for these claims. In
22 view of the comments below, Applicant respectfully requests that the Office
23 withdraw its rejections. Before discussing the substance of the Office’s rejections,
24 however, a section entitled “The §103 Standard” is provided and will be used in
25 addressing the Office’s rejections.

1 **The §103 Standard**

2 To establish a *prima facie* case of obviousness that relies on two or more
3 references, the Office must provide explicit findings on motivation or suggestion
4 to combine these references, *In re Mills*, 916 F.2d 680, 683, 16 USPQ2d 1430,
5 1433 (Fed. Cir. 1990).

6 According to the Federal Circuit and the MPEP, the evidence on which an
7 obviousness rejection is based must be set forth in the Office Action. MPEP
8 2144.08 III states as follows:

9
10 Explicit findings on motivation or suggestion to select the
11 claimed invention should also be articulated in order to support a 35
12 U.S.C. 103 ground of rejection. *Dillon*, 919 F.2d at 693, 16 USPQ2d at
13 1901; *In re Mills*, 916 F.2d 680, 683, 16 USPQ2d 1430, 1433 (Fed. Cir.
14 1990). Conclusory statements of similarity or motivation, without any
15 articulated rationale or evidentiary support, do not constitute factual
16 findings.

17 Further, according to the MPEP 2142 (emphasis added):

18 The examiner bears the initial burden of factually supporting any
19 *prima facie* conclusion of obviousness. *If the examiner does not*
20 *produce a prima facie case, the applicant is under no obligation to*
21 *submit evidence of nonobviousness.*

22 Hence, when patentability turns on the question of obviousness, the search
23 for and analysis of the prior art includes evidence relevant to the finding of
24 whether there is a teaching, motivation, or suggestion to select and combine or
25 modify the references relied on as evidence of obviousness. The need for
specificity pervades this authority. See, e.g., *In re Kotzab*, 217 F.3d 1365, 1371,
55 USPQ2d 1313, 1317 (Fed. Cir. 2000) ("particular findings must be made as to

1 the reason the skilled artisan, with no knowledge of the claimed invention, would
2 have selected these components for combination in the manner claimed”).

3 Thus, the Office must provide factual evidence showing a motivation to
4 combine references to establish a *prima facie* case of obviousness.

5
6 **Response to 35 U.S.C. §103 Rejections**

7 Applicant respectfully submits that the Office fails to establish a *prima*
8 *facie* case of obviousness in rejecting the subject matter of independent claims 16,
9 28, 45, 55, 59, 61, and 63 for two reasons. First, the Office fails to establish a
10 *prima facie* case by failing to provide factual evidence showing a motivation to
11 combine the Theimer reference with the Christ reference. Second, the Office fails
12 to establish a *prima facie* case by improperly combining the Theimer reference
13 with the Christ reference.

14
15 **Failure to Provide Factual Evidence Showing Motivation to Combine**

16 The Office fails to establish a *prima facie* case by failing to provide factual
17 evidence showing a motivation to combine the Theimer reference with the Christ
18 reference.

19 For each of the above-cited independent claims rejected under 103, the
20 Office lists portions of Theimer relied on in rejecting some of the subject matter of
21 the relevant claim. Following this, the Office provides the following sets of
22 reasoning as its sole support to show that the Christ reference teaches those
23 elements of these independent claims not taught by the Theimer reference. The
24 Office does not, as shown below, provide any evidence showing a motivation to
25 combine the Theimer reference with the Christ reference.

1 For claim 16, the Office's sole support is:

2 [B]ut Theimer does not explicitly indicate using
3 environmental profiling to establish the location of the computing
4 unit. Christ teaches a system with a plurality of RF beacons
5 (Column 9, lines 50-53) that polls the plurality of beacons for
6 location/environmental information about the computing unit
7 (Column 10, lines 34-53). It would have been obvious to one of
8 ordinary skill in the art at the time the invention was made to use
9 Christ's teaching of locating users in certain rooms inside of a
10 building (Column 7, lines 13-17) using present wireless technology
11 (Column 9, lines 43-48) in Theimer's location system.

12 *Office Action, page 4, emphasis in original removed.*

13 For claim 28, the Office's sole support is:

14 [B]ut Theimer does not explicitly indicate using a beacon
15 packet's signal strength received from the wireless access point and
16 using a [previous] established radio map. Christ teaches a system
17 with a plurality of RF beacons (Column 9, lines 50-53) that polls the
18 plurality of beacons for location/environmental information and their
19 signal strength about the computing unit (Column 10, lines 34-53).
20 It would have been obvious to one of ordinary skill in the art at the
21 time the invention was made to use Christ's teaching of locating
22 users in certain rooms inside of a building (Column 7, lines 13-17)
23 using present wireless technology (Column 9, lines 43-48) in
24 Theimer's location system.

25 *Office Action, pages 5-6, emphasis in original removed.*

For claim 45, the Office's sole support is:

[B]ut Theimer does not explicitly indicate using a beacon
packet's signal strength received from the wireless access point and
using a [previous] established radio map. Christ teaches a system
with a plurality of RF beacons (Column 9, lines 50-53) that polls the
plurality of beacons for location/environmental information and their
signal strength about the computing unit (Column 10, lines 34-53).
It would have been obvious to one of ordinary skill in the art at the
time the invention was made to use Christ's teaching of locating
users in certain rooms inside of a building (Column 7, lines 13-17)

1 using present wireless technology (Column 9, lines 43-48) in
2 Theimer's location system.

3 *Office Action, pages 7-8, emphasis in original removed.*

4 For claim 55, the Office's sole support is:

5 [B]ut Theimer does not explicitly indicate using a beacon
6 packet's signal strength received from the wireless access point and
7 using a [previous] established radio map. Christ teaches a system
8 with a plurality of RF beacons (Column 9, lines 50-53) that polls the
9 plurality of beacons for location/environmental information and their
10 signal strength about the computing unit (Column 10, lines 34-53).
11 It would have been obvious to one of ordinary skill in the art at the
12 time the invention was made to use Christ's teaching of locating
13 users in certain rooms inside of a building (Column 7, lines 13-17)
14 using present wireless technology (Column 9, lines 43-48) in
15 Theimer's location system.

16 *Office Action, page 13, emphasis in original removed.*

17 For claim 59, the Office's sole support is:

18 [B]ut Theimer does not explicitly indicate using a beacon
19 packet's signal strength received from the wireless access point and
20 using a [previous] established radio map. Christ teaches a system
21 with a plurality of RF beacons (Column 9, lines 50-53) that polls the
22 plurality of beacons for location/environmental information and their
23 signal strength about the computing unit (Column 10, lines 34-53).
24 It would have been obvious to one of ordinary skill in the art at the
25 time the invention was made to use Christ's teaching of locating
users in certain rooms inside of a building (Column 7, lines 13-17)
using present wireless technology (Column 9, lines 43-48) in
Theimer's location system.

Office Action, pages 14-15, emphasis in original removed.

For claim 61, the Office's sole support is:

Theimer also does not explicitly indicate using a beacon
packet's signal strength received from the wireless access point and
using a [previous] established radio map. Christ teaches a system
with a plurality of RF beacons (Column 9, lines 50-53) that polls the
plurality of beacons for location/environmental information and their

1 signal strength about the computing unit (Column 10, lines 34-53).
2 It would have been obvious to one of ordinary skill in the art at the
3 time the invention was made to use Christ's teaching of locating
4 users in certain rooms inside of a building (Column 7, lines 13-17)
5 using present wireless technology (Column 9, lines 43-48) in
6 Theimer's location system.

7 *Office Action, pages 16-17, emphasis in original removed.*

8 For claim 63, the Office's sole support is:

9 [B]ut [Theimer] does not explicitly indicate measuring
10 relative strengths of the radio frequency transmissions; determining
11 a location of a mobile computing device based on the relative
12 strengths. Christ teaches a system with a plurality of RF beacons
13 (Column 9, lines 50-53) that polls the plurality of beacons for
14 location/environmental information and their signal strength about
15 the computing unit (Column 10, lines 34-53). It would have been
16 obvious to one of ordinary skill in the art at the time the invention
17 was made to use Christ's teaching of locating users in certain rooms
18 inside of a building (Column 7, lines 13-17) using present wireless
19 technology (Column 9, lines 43-48) in Theimer's location system.

20 *Office Action, pages 9-10, emphasis in original removed.*

21 For failing to provide any factual evidence showing a motivation to
22 combine the Theimer reference with the Christ reference, Applicant respectfully
23 submits that the Office fails to establish a *prima facie* case of obviousness in
24 rejecting all of these independent claims.

25 Improper Combination of Theimer and Christ

The Office fails to establish a *prima facie* case by improperly combining
the Theimer reference with the Christ reference. First, Thiemer teaches locating a
device using a cell-based approach that contravenes combination with Christ's
locating a person using multiple signals and signal strengths. These two
approaches are simply incompatible. Second, Theimer teaches the many

1 advantages of infrared while Christ teaches against using infrared. One skilled in
2 the art would not combine references where one reference teaches use of infrared
3 in glowing terms while the other teaches its failures and bases its invention on
4 being superior to infrared.

5
6 *Partitioned Cell versus Signal Strength*

7 The Office fails to establish a *prima facie* case by improperly combining
8 the Theimer reference with the Christ reference because Theimer teaches locating
9 a device using a cell-based approach that contravenes combination with Christ's
10 locating a person using multiple signals and signal strengths. A system that
11 determines a device's location based on which isolated, partitioned cell a device is
12 in does not require and teaches against a system that determines a person's
13 location based on multiple signals and measuring strengths of these signals to
14 determine a location.

15 Theimer directs his disclosure to partitioning a communication space into
16 cells in contrast to using environmental profiling or signal strengths to establish a
17 device's location. Theimer carefully describes partitioning a communication
18 space into isolated cells to determine a mobile unit's location and directs his
19 disclosure to the importance of this partitioning.

20 Theimer describes radio and infrared transceivers 14 and 16, shown in
21 Figure 1. These transceivers are shown in Figure 1 in separate rooms 11. Theimer
22 describes why this is the case—stating that each room 11 is defined as an isolated
23 communication “cell” because each transceiver is effectively partitioned into that
24 room. *See column 5, lines 48-55.* Thus, a mobile unit communicating with either
25 of these transceivers 14 or 16 may be deemed to be in that particular room on the

1 basis of being in communication with that room's transceiver—not through
2 environmental profiling of multiple signals.

3 Further, Theimer does not disclose receipt of multiple signals from either of
4 the room's transceivers. Instead, Theimer contemplates receiving a single infrared
5 signal or a "near field" component of a single radio frequency to locate a mobile
6 unit. Near field components, discussed in greater detail herein, are used by
7 Theimer like infrared transceivers. In both cases they permit an isolated
8 communication cell by which a device may be located if it is in that cell.

9 In the case of the single infrared signal, Theimer describes use of a single,
10 non-RF signal to locate a mobile unit. First, this is apparent because each infrared
11 transceiver 16 effectively partitions each room 11 into a communication cell.
12 *Theimer, column 5, lines 53-55.* Second, this is apparent because walls 13 are
13 essentially opaque to infrared transmission, and thus, only one signal may be
14 received at once. *Column 5, lines 51-52.* Third, this is apparent because infrared
15 bandwidth may be reused for each cell. *Column 5, lines 55-57.* Because each
16 infrared transceiver partitions each room into a communication cell and
17 neighboring transceivers may reuse bandwidth, likely only one transceiver may be
18 in communication with a mobile unit at a time. Theimer reinforces this logical
19 conclusion at column 6, lines 51-56, where Theimer describes tab 26 (a mobile
20 unit) moving into a communication "dead zone" where no transceiver may
21 maintain contact. Thus, Theimer contemplates receipt of a single, isolated, and
22 partitioned signal.

23 Accordingly, it is respectfully submitted that Theimer teaches locating a
24 device using isolated cells, which by their vary nature provide a manner for
25

1 locating not needing—and making illogical combination with—a manner for
2 locating devices relying on measurement of multiple signals.

3 The Christ reference is relied on by the Office to teach receipt of signals
4 from multiple RF beacons and determining a device's location based on measuring
5 those signals strengths, among other things. As set forth above, Theimer does not
6 need and teaches away from determining a location by measuring the strength of
7 multiple signals.

8 For at least this reason, the Office fails to establish a *prima facie* case by
9 improperly combining the Theimer reference with the Christ reference.

11 *Infrared*

12 The Office also fails to establish a *prima facie* case by improperly
13 combining the Theimer reference with the Christ reference because Theimer
14 teaches the many advantages of infrared while Christ teaches against using
15 infrared. One skilled in the art would not combine Theimer, which teaches use of
16 infrared in glowing terms, with Christ, which teaches its failures and bases its
17 invention on being superior to infrared.

18 Theimer teaches the advantageous use of infrared transceivers to locate a
19 device, stating the many advantages of doing so: "one advantage of using infrared
20 as a medium is reuse of frequencies"; "infrared transmissions in one room do not
21 interfere with infrared transmissions in another"; and "[i]ndividual rooms 11 are
22 termed communication 'cells' because of this effective partitioning". (See
23 *Theimer*, Figure 1 and column 5, lines 50-64).

24 Christ teaches away from use of infrared transceivers. Christ teaches that
25 its system is superior to IR systems, because "[u]nlike infrared (IR) locating

1 systems, the present invention does not fail when loose clothing covers the body-
2 worn transmitter. What's more, direct sunlight will not jam the sensors used in the
3 present invention (like it can with IR sensors are employed). Consequently, the
4 apparatus of the present invention provides ultra-reliable personal security both
5 indoors and outdoors." (Christ, column 9, lines 23-29.) Christ goes on, stating
6 that "the present invention provides the following benefits: ... [l]ocates
7 transmitters indoors and outdoors[, and R]emains unaffected by clothing or
8 building materials." (Christ, column 10, lines 1-5.)

9 A person skilled in the art at the time the invention was made would not
10 seek to combine Christ and Theimer. Theimer teaches the many positive
11 advantages of an IR system—Christ teaches its many failures.

12 For at least this reason, the Office fails to establish a *prima facie* case by
13 improperly combining the Theimer reference with the Christ reference.

14
15 Claims 17, 18, and 25-27; 29-39; 46-54; 57; 60; 62; and 64-67 depend
16 from independent claims 16; 28; 45; 55; 59; 61; and 63, respectively, and are
17 allowable as depending from an allowable base claim. These claims are also
18 allowable for their own recited features that, in combination with those recited in
19 their base claim, are neither disclosed nor suggested in references of record, either
20 singly or in combination with one another. Therefore, withdrawal of the rejections
21 of claims 17, 18, 25-27, 29-39, 46-54, 57, 60, 62, and 64-67 is respectfully
22 requested.

1 **Conclusion**

2 All pending claims are in condition for allowance. Applicant respectfully
3 requests reconsideration and prompt issuance of the present application. Should
4 any issue remain that prevents immediate issuance of the application, the
5 Examiner is encouraged to contact the undersigned attorney to discuss the
6 unresolved issue.

7
8 Respectfully Submitted,

9 Date: 7/24/05

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